CERTIFICATE OF MAILING BY FIRST CLASS MAIL (37 CFR 1.8)			Docket No.
Applicant(s): Jiann H. Chen, et al.			81326LPK/89158.059902
Serial No.	Filing Date	Examiner	Group Art Unit
09/608,818	June 30, 2000	E. Tsoy	1762

Invention:

METHOD OF CURING A FUSER MEMBER OVERCOAT AT LOW TEMPERATURES

I hereby certify that this Declaration (5 pages)
(Identify type of correspondence)

is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on June 7, 2004
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PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appeal No.:	2003-1989	)	Examiner: E. Tsoy
Applicant:	Jiann H. Chen et al.	)	
Serial No.:	09/608,818	)	Art Unit: 1762
Filed:	June 30, 2000	)	
For:	METHOD OF CURING A FUSER MEMBER OVERCOAT AT LOW TEMPERATURES	)	

DECLARATION UNDER 37 CFR §1.132 BY JIANN H. CHEN, Ph.D

Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria VA 22313-1450

I, Jiann H. Chen, declare:

1. I received a Ph.D in polymer chemistry from Temple University in Philadelphia, Pennsylvania and am currently employed as a Scientific Associate with NexPress Solutions LLC, Rochester, New York. Previously I was employed as a Research Associate with Eastman Kodak Company.

2. I am a joint inventor with Joseph A. Pavlisko, Charles C. Anderson, and Robert A. Lancaster in the above-identified patent application Serial No. 09/608,818, filed June 30, 2000 for METHOD OF CURING A FUSER MEMBER OVERCOAT AT LOW TEMPERATURES.

3. I am familiar with all of the references cited by the Examiner in the 35 U.S.C. §103(a) rejections of the claims of the above-referenced application Serial No. 09/608,818: Hartley et al., U.S. Patent No. 4,853,737 ("Hartley), Lentz, U.S. Patent No. 4,257,699 ("Lentz"), Schlueter, Jr. et al., U.S. Patent No. 5,995,796 ("Schlueter"), and Blong et al., U.S. Patent No. 5,527,858. ("Blong").

4. I have reviewed the two references newly cited by the Board: Kirk-Othmer, "Elastomers, Polyisoprene to Expert Systems," *Encyclopedia of Chemical Technology*, pp. 16-20, 22-25 (4th Ed., Vol. 9, John Wiley & Sons, 1994) ("Kirk"); and Lewis, *Hawley's Condensed Chemical Dictionary*, pp. 437, 1097 (13th Ed., Van Nostrand Reinhold Publ., 1997) ("Lewis").

5. Lewis teaches that the term "elastomer" originally referred to "synthetic thermosetting high polymers having properties similar to those of vulcanized natural rubber, namely the ability to be stretched to at least twice their original length and to retract very rapidly to approximately their original length when released (which) can be cross-linked…" and further teaches that "The term was later extended to include uncross-linked polyolefins that are thermoplastic, ...generally known as TPO rubbers" whose extension and retraction properties are notably different from those of thermosetting elastomers…"

6. Lewis teaches that the term "thermoplastic" refers to a "high polymer that softens when exposed to heat and returns to its original condition when returned to room temperature" and mentions as examples of thermoplastic polymers both natural substances such as crude rubber and synthetic materials such as fluorocarbon polymers.

7. Lewis teaches that the term "thermoset " refers to a polymer that "solidifies or 'sets' irreversibly when heated," usually by "a cross-linking reaction of the molecular constituents induced by heat or radiation…" and further teaches that the cross-linking reaction can be promoted by the addition of curing agents such as organic peroxides.

8. Based on the definitions of Lewis as discussed in ¶¶5, 6, and 7, I conclude that the terms "elastomer" and "thermoplastic" refer to distinctly different classes of materials having differing physical characteristics and that the term "thermoset" applies both to cross-linked fluoroelastomers such as cured Viton A or Viton B and to cross-linked thermoplastic fluoropolymers such as cured THV fluorothermoplastics.

9. Kirk relates to synthetic thermoplastic elastomers, which are described on page 16, as typically being multiphase systems that containing thermodynamically incompatible mixtures of a hard polymer that becomes fluid on heating and a softer material that is rubberlike at room temperature.

10. Kirk teaches that the hard and soft polymers described in ¶9 tend to separate into two phases, even when they are chemically combined into the same molecule by block or graft copolymerization, as schematically illustrated by Figs. 1 and 2 on pages 17-18 for two types of block copolymers.

11. Kirk also teaches, on page 18, that the thermoplastic elastomer need not be a block copolymer but can be instead a mechanically blended mixture of a hard thermoplastic and a softer, more rubberlike polymer that may or may not be crosslinked, the hard and softer materials forming separate phases, as shown in Figs. 3 and 4 on page 19.

12. Based on the disclosures of Kirk as discussed in ¶¶9, 10, and 11, I conclude that the thermoplastic elastomeric systems discussed in this reference are multiphase materials typically consisting of separately formed hard and soft components, in contrast to a fluorocarbon thermoplastic random copolymer that is formed in a single-step reaction and is characterized by a substantially uniform distribution of the reactant monomers.

13. Blong, one of the references cited by the Examiner in the §103(a) rejections of the claims, discloses a melt-processable coating composition comprising a blend of a major amount of a melt-processable thermoplastic fluoropolymer component and 0.01-20 wt.% of a poly(oxyalkylene) component, which is an example of a hard polymer/elastomer combination discussed in Kirk.

14. In addition to the above-identified patent application Serial No. 09/608,818, I am the first-named inventor on many patents related to electrostatographic imaging apparatus and materials, including the following:

U.S. Patent No. 6,355,352, issued March 12, 2002 for FUSER MEMBER WITH LOW-TEMPERATURE-CURE OVERCOAT

U.S. Patent No. 6,361,829, issued March 26, 2002 for METHOD OF COATING FUSER MEMBER WITH THERMOPLASTIC CONTAINING ZINC OXIDE AND AMINOSILOXANE

U.S. Patent No. 6,372,833, issued April 16, 2002 for FLUOROCARBON THERMOPLASTIC RANDOM COPOLYMER COMPOSITION CURABLE AT LOW TEMPERATURES

U.S. Patent No. 6,416,819, issued July 9, 2002 for METHOD OF PREPARING LOW-TEMPERATURE-CURE-COMPOSITION

U.S. Patent No. 6,419,615, issued July 16, 2002 for ELECTROSTATIC CHARGE-SUPPRESSING FLUOROPLASTIC FUSER ROLLER

U.S. Patent No. 6,429,249, issued August 6, 2002 for FLUOROCARBON THERMOPLASTIC RANDOM COPOLYMER COMPOSITION

U.S. Patent No. 6,444,741, issued September 3, 2002 for METHOD OF PREPARING THERMOPLASTIC RANDOM COPOLYMER COMPOSITION CONTAINING ZINC OXIDE AND AMINOSILOXANE

U.S. Patent No. 6,696,158, issued February 24, 2004 for FUSER MEMBER WITH FLUOROCARBON THERMOPLASTICS COATING

15. Each of the patents listed in ¶14 discloses and claims a coating composition that comprises a fluorocarbon thermoplastic random copolymer containing the same ranges of the same monomers as that recited in claim 1 of the above-referenced application Serial No. 09/608,818, i.e., subunits of —$(CH_2CF_2)x$—, —$(CF_2CF(CF_3)y$—, and —$(CF_2CF_2)z$—, wherein x is from 1 to 50 or 60 to 80 mole percent, y is from 10 to 90 mole percent, z is from 10 to 90 mole percent, and $x + y + z$ equals 100 mole percent.

16. Hartley, which discloses a fuser roll having an outer layer that comprises cured fluorooelastomer and is the lead reference cited by the Examiner in the §103(a) rejections of the claims, is a cited reference in every one of the seven patents listed in ¶14 except U.S. Patent No. 6,419,615.

17. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: April 14, 2004

Jiann Chen

Jiann H. Chen